Technical Section [TECHNICAL NOTES AND TIPS

A useful technique for subtalar fracture dislocation

R Singh, D Hiller, R Rees

University Hospitals of North Midlands NHS Trust, UK

CORRESPONDENCE TO

Rohit Singh, E: rohitamolsingh@hotmail.com

doi 10.1308/rcsann.2016.0086

BACKGROUND

Subtalar dislocation occurs through disruption of two separate bony articulations: the talonavicular and talocalcaneal joints.¹ It commonly results from motor vehicle accidents, falls from a height, sporting activities, jumping, running, or twisting.² The majority of dislocations can be reduced in a closed manner with appropriate sedation. Failed reduction by closed means occurs in 10–20% of cases of medial and lateral dislocations.³ A number of anatomic explanations exist for failed closed reduction, such as ‘buttonholing’ of the talar head through the extensor digitorum brevis, extensor retinaculum, talonavicular ligaments or joint capsule. We present a novel reduction technique using skeletal traction to assist in closed reduction.

TECHNIQUE

A 3.5mm diameter, smooth, stainless steel Steinmann pin is drilled through the ipsilateral calcaneus in a medial-to-lateral direction. A traction bow is applied (Fig 1). This has three uses: first, to enable traction to be applied and reduce the fracture; second, to control rotation; and third, to stabilise the talus, which otherwise would be extremely unstable. This technique minimises the soft tissue insult and allows time to plan definitive fixation (Figs 2 and 3).

Figure 1 Steinmann pin and traction bow construct applied to composite sawbone model, enabling skeletal traction

Figure 2 Preoperative image showing subtalar fracture dislocation

Figure 3 Postoperative image demonstrating satisfactory reduction with use of skeletal traction bow

DISCUSSION

This time efficient method uses inexpensive materials and applies basic trauma surgery principles to achieve optimal rotational control to assist in joint relocation and fracture stabilisation. We advocate this technique to facilitate a closed reduction of the subtalar joint but also highlight that it is an invasive technique where the Steinman pin is removed to minimize the risk of potential pin site infection.⁴

References

1. Perugia D, Basile A, Massoni C *et al*. Conservative treatment of subtalar dislocations. *Int Orthop* 2002; **26**: 56–60.
2. Bibbo C, Anderson RB, Davis WH. Injury characteristics and the clinical outcome of subtalar dislocations: a clinical and radiographic analysis of 25 cases. *Foot Ankle Int* 2003; **24**: 158–163.
3. DeLee JC, Curtis R. Subtalar dislocation of the foot. *J Bone Joint Surg Am* 1982; **64**: 433–437.
4. Paley D, Jackson RW. Surgical scrub sponges as part of the traction apparatus: an alternative to pin site care to reduce pin track infections. *Injury* 1985; **16**: 605–606.

Broken pedicle screw thread extraction from within the pedicle

MD Sewell, T Woodacre, A Clarke, M Hutton

Royal Devon and Exeter NHS Foundation Trust, UK

CORRESPONDENCE TO

Mathew Sewell, E: matbuzz1@hotmail.com
doi 10.1308/rcsann.2016.0080

BACKGROUND

Following spinal fracture dislocation with neurological deficit (Fig 1), it is usual to perform emergent realignment, decompression and

Figure 1 Sagittal computed tomography showing fracture dislocation at L3/L4 with spinal canal retropulsion of the L4 vertebral body in a patient with an American Spinal Injury Association grade B neurological deficit at L3

Figure 2 Lateral radiography immediately following surgery showing satisfactory fracture reduction with single level monoblock screw posterior stabilisation and no anterior column support

Figure 3 Lateral radiography at seven weeks showing broken screw threads in the pedicles of L3 and L5